Amendment To The Specification

Please amend paragraphs [0006], [0050], [0051], [0070], and [0071] as shown below:

[0006] Recently, two very effective alternative strategies were described. The first is based on a self-organizing procedure which repeatedly selects subsets of objects from the set of objects to be mapped, and refines their coordinates so that their distances on the map approximate more closely their corresponding relationships. (~~U.S. Pat. No. 6,295,514, and U.S. application Ser. No. 09/073,845, filed May 7, 1998~~ U.S. Patent Nos. 6,295,514 and 6,453,246, each of which is incorporated by reference herein in its entirety). The method involves the following steps: (1) placing the objects on the map at some initial coordinates, y_i, (2) selecting a subset of objects, (3) revising the coordinates, y_i, of at least some of the selected objects so that at least some of their distances, d_{ij}, match more closely their corresponding relationships r_{ij}, (4) repeating steps (2) and (3) for additional subsets of objects, and (4) exporting the refined coordinates, y_i, for the entire set of objects or any subset thereof.

[0050] In other embodiments, mapping coordinates for the products in the training subset of products are obtained in step 202 by generating an initial set of mapping coordinates for the products in the training subset of products and refining the coordinates in an iterative manner until a stop criterion is satisfied. This may be accomplished, for example, by selecting two products at a time from the training subset of products and refining the mapping coordinates of at least one of the selected products based on the coordinates of the two products and a distance between the two products. The mapping coordinates of at least one of the selected products is refined so that the distance between the refined coordinates of the two products is more representative of a relationship between the products. This mapping process is further described in ~~U.S. Pat. No. 6,295,514, and U.S. application Ser. No. 09/073,845, filed May 7, 1998~~ U.S. Patent Nos. 6,295,514 and 6,453,246.

[0051] In other embodiments, the generation of mapping coordinates for the products in the training subset of products is accomplished by selecting at least three products from the training subset of products and refining the mapping coordinates of at least some of the selected products based on the coordinates of at least some of the selected products and at least some of the distances between the selected products. The mapping coordinates of at least some of the selected products are refined so that at least some of the distances between the refined coordinates of at least some of the selected products are more representative of corresponding relationships between the products. This process is typically repeated for additional subsets of products from the training subset of products until a stop criterion is satisfied. This mapping process is further described in ~~U.S. Pat. No. 6,295,514, and U.S. application Ser. No. 09/073,845, filed May 7, 1998~~ U.S. Patent Nos. 6,295,514 and 6,453,246.

[0070] In embodiments of the invention, the nonlinear mapping algorithm (p_i -> y_i, i=1, 2, . . . , k, y_i, ϵ $\mathcal{R}^m$) is any conventional multidimensional scaling or nonlinear mapping algorithm. In other embodiments, the nonlinear mapping algorithm (p_i-> y_i, i=1, 2, . . . , k, $y_i \epsilon \mathcal{R}^m$) comprises the following steps to determine each y_i; (1) placing the training subset of products on an m-dimensional map at some initial coordinates; (2) selecting a pair of products from the training subset of products

having a known or assigned relationship; (3) revising the mapping coordinates of one or both of the selected products based on their assigned relationship and the corresponding distance between the products on the map so that the distance between the products on the m-dimensional map are more representative of the assigned relationship between the products; and (4) repeating steps (2) and (3) for additional pairs of products from the training subset of products until a stop criterion is satisfied. This mapping process is further described in ~~U.S. Pat. No. 6,295,514, and U.S. application Ser. No. 09/073,845, filed May 7, 1998~~ U.S. Patent Nos. 6,295,514 and 6,453,246.

[0071] In other embodiments of the invention, the nonlinear mapping algorithm ($p_i \rightarrow y_i$, i=1, 2, . . . , k, $y_i \in \Re^m$) comprises the following steps to determine each y_i: (1) placing the training subset of products on an m-dimensional map at some initial coordinates; (2) selecting at least three products having at least some known or assigned relationships; (3) revising mapping coordinates of at least some of the selected products so that at least some of the distances between the refined coordinates of at least some of the selected products are more representative of corresponding relationships between the products; and (4) repeating steps (2) and (3) for additional subsets of products from the training subset of products until a stop criterion is satisfied. This mapping process is further described in ~~U.S. Pat. No. 6,295,514, and U.S. application Ser. No. 09/073,845, filed May 7, 1998~~ U.S. Patent Nos. 6,295,514 and 6,453,246.